MINI HAND HELD TYPE
UHF TRANSCEIVER

USER'S OPERATION MANUAL

MODEL : MH-430

CONTENTS

OPTION SETTING MODE

Press and hold "FUNC" button under the condition of Power off, and
then turn on the radio. To enter each option setting mode, press "FUNC
 + or " button.

1. Setting of Time-Out-Timer
   If transmitting is continued over than fixed time, this feature is used
   to cut off the transmitting compulsorily.

   Display of Operating in Time-Out-Time setting mode.

   To change the setting time, press the " or " button.

2. Setting of Busy Channel Lock Out
   When a signal is receiving at the radio, this feature is used to
   prohibit the transmitting.

   Display of Operating in Busy Channel Lock Out Setting Mode.

   If you press the " or " button in this setting mode, Busy
   Channel Lock Out will toggle and the changed contents will appear
   on the LCD.

4

NOTE : If you press "PTT" button on operating of Busy Channel
        Lock Out, error message will appear on the LCD and
        your radio will stay in the receiving mode.

3. Setting of TX Delay Option
   In the CTCSS Tone Squelch option mode, this feature allows to
   keep transmitting mode in order to prevent Squelch tail when the
   "PTT" button is released.

   Display of TX Delay Option Setting Mode.

   If you press the " or " button in this setting mode, TX delay
   option will toggle and the changed contents will appear on the LCD.

4. SCAN Delay Time
   This feature allows to stop the scanning for the fixed time when a
   signal is receiving at the radio during the scanning process after
   that scanning process will continue.

   Display of Operating SCAN Delay Time Mode

   If you press the " or " button in this setting mode, scan time
   will delay(or shorten) 1 second per press the button and changed
   contents will appear on the LCD.

5. Setting of Power Save mode
   This feature allows to increase the useful life of your battery
   significantly.

Display of Operating Power save On/Off setting Mode.

If you press the " or " button in this setting mode, power save
On/Off will toggle on the LCD.

NOTE : In the option setting mode,
  A. If you hold "FUNC" button and then press " or " button,
    the next(previous) setting mode will appear on the LCD.
  B. If you press the "PTT" button, all changed contents will be
    stored and the radio will return for normal operation.
  C. Other buttons located on the front of the radio will not
    operate. If you press these buttons, error beep tone will sound.

DESCRIPTION OF FEATURES

Top Panel Features

1. Power On/Off, Volume
Turn the Volume switch clockwise to turn power on and set desired
volume. Turn the Volume button counter-clockwise to turn power off.

2. Squelch

This control is to cut off or eliminate receiver background noise in the absence of an incoming signals. For maximum receiver sensitivity, it is desired that the control be adjusted only to the point where the receiver background on ambient background noise is eliminated. The incoming signals that are then received will be stronger that the background noise.

3. Antenna

This antenna provides good performance given it's overall size.

4. Microphone and Speaker Jack

Jack is for connection of optional speaker microphone accessory. BTL(Bridge Tied Load) Amplifier is for this radio. If you want to use External Speaker/MIC for this radio, Ground Devide External Speaker/MIC should be used.

NOTE : If you use common Ground External Speaker/MIC for this radio, the radio would be out of order due to burning of circuit. Therefore, we would like to recommend you to use our own External Speaker/MIC for this radio. If you want to use another maker's External Speaker/MIC which you have for this radio, please ask the shop if you may use your External Speaker/MIC or not.

Dust Cover : When Speaker/MIC are not being used, this prevents dirt and moisture from getting inside the radio.

Side and Back Panel Features

1. Push-To-Talk(PTT) Button

　Press the "PTT" button and the transmitter is activated : you can

　now send a message. To receive, release the "PTT" button.

2. Function(FUNC) button

　This button, when used in conjunction with the buttons in the front

　panel, allows for access of each function.

　Press and hold "FUNC" button in normal mode(not memory channel

　mode and Call channel mode), then two small seven-segments

　indicates stored memory channel number. But, if you do not press

　"FUNC" button, these segments indicates current transmitting/

　receiving channel number.

3. Belt Clip

　Allows for easy of carrying while attached to users belt.

4. D.C Jack

　Allows for using external D.C Wall Charger.

Front Panel Features

1. MO, Fr/Ch

 1) MO(Monitor)

　Press and hold the "MO(Monitor)" button in the receiving mode,

　and then the Audio will sound until the "MO" button will be

　released. If a signal is not correct call in the CTCSS option mode,

　the Audio will sound during pressing and holding the "MO" button.

　If the "MO" button is pressed over than one second, R/TX

　Condition and SCAN Skip Condition will appear on the LCD per one

　second. But, they will not appear on the LCD in the setting mode.

Display of RX Tone.

Display of TX Tone.

Display of SCAN Skip Condition.

2) Fr/Ch(Selection of Frequency or Channel)
   If you press the "FUNC + MO(Fr/Ch)" button when Frequency is
   displayed on the LCD, Channel No. will appear on the LCD. Press
   the "FUNC + MO(Fr/Ch)" button once again, Frequency will appear
   on the LCD.

   Display of Frequency(RX/TX Channel).

   The last 2 small segments will show memoried channel number,
   but balance 7 big segments will show RX/TX frequency.

Display of Channel(RX/TX Channel)

The last 2 small segments will show memoried channel number
and balance 7 big segments will also show RX/TX channel
number.

2. Channel Down()/TS Button

1) Channel Down() button
Press the "" button to arrow to move to a lower Channel than
is currently shown on the LCD.

2) TS(TONE Number Selection) Button
Press "FUNC + DOWN(TS)" button in the receiving mode(not Scan
/Dual Watch Mode). If the CTCSS option Board is installed in the
set, you can enter the Channel RX/TX setting mode. If not,
the error beep tone will sound.

Display of CTCSS RX Tone setting mode

In the above condition, press the "FUNC + or " button to
enter the TX Tone setting mode.

Display of CTCSS TX Tone setting mode

In the above condition, press the " or " button to increase (decrease) Tone Frequency(Tone Channel No.). If you press and the hold the " or " button over than one second, Tone Frequency(Tone Channel No.) will increase(decrease) rapidly. If you press the PTT button, all changed contents will be stored and the radio will turn to normal operation. If you press any other buttons on the front cabinet, the error beep tone will sound.

3. Channel Up(), TO Button

1) Channel Up() button
Press the "" button to arrow to move a higher Channel than is currently shown on the LCD.

2)TO(TONE) Button
To activate, press the „FUNC + UP(TO)" button in the receiving mode(not Scan/Dual Watch Mode), the Tone option will be on(if tone option is off, „TSQ" will appear on the LCD).
If the CTCSS option Board is not installed in the set, the error beep tone will sound when you press the „FUNC + UP(TO)" button in the receiving mode(not Scan/Dual Watch Mode)

4. Lamp( ), BP(Beep) Button

1) Lamp() Button
Press the "" button, the lamp will stay on for four seconds, after which it will turn itself off automatically. If you press another button on the front cabinet when the lamp is on, the lamp will stay on for four second from that time. If you press the "" button over than one second, the lamp will stay on until you press the "" button once again.

2) Bell feature
To activate : Press and hold the lamp button and turn the power on. The "   " will appear on the LCD. Bell melody will sound and this feature will release("   " will disappear on the LCD.)

To deactivate : Press the "PTT" button.

3) BP(Beep) Button

This feature gives the user an audible confirmation through a short
beep tone that the radio has been turned on. The MH-430 comes
with this feature already turned on. If you would like to deactivate
this feature, press "FUNC + LAMP(BP)" button. To reactivate the
"Beep" feature, repeat the above process.
When "Beep" feature is off, the key beep tone and the error beep
tone will not sound.

NOTE : Bell Melody does not have concern with Beep tone.

5. MR, MW Button

1) MR(Memory Channel) Button
  A. TX/RX in the memory channel
    To access the stored channel No. in the memory, press the
    "MR" button, and then select the channel No. you want to
    access by using " or " button. The stored channel
    No. will appear at the 2 small segments on the LCD to
    indicate that this feature is currently activated. If you press "C"
    button, the radio will enter the Call channel mode.

  Display of Memory channel.

    To re-activate normal condition, press the "MR" button once
    again, and then the used last channel No. before memory
    channel mode will appear on the LCD.

    To change the channels stored within a memory location ;
    - Press "FUNC + MR(MW)" button, the "MR" icon and 2
     signal segments on the LCD will twinkle. (If memory location
     is empty, CH 1 will appear.)

  Display of stored TX/RX channel number re-setting

    - Press the " or   button to select the RX/TX channel
     No. and then press the "PTT or MR" button.
    - If you want to delete the stored channel No. at the memory
     location, press the "FUNC" button over than two seconds.

    To Re-set the Memory channel Scan On/Off condition ;
    - Press the "FUNC + or " button, the "MR" icon on the
     LCD will twinkle.

Display of Memory channel Scan On/Off condition re-setting

- Press the " or button, the memory channel scan skip
  On/Off will toggle.
- Press the "PTT or MR" button to store the changed contents.
NB : - If you press the "FUNC+ or " button, the radio will
    return to stored TX/RX channel number re-setting mode.
  - If you press the "FUNC" button over than two seconds, the
    stored channel will delete and the radio will return to normal
    operation.

2) MW(Memory Channel Writing) Button

To store the channels in the memory locations ;
- Press the "MR" button.
- Select the memory location by using " or button.
- Press the "MR" button to return to the normal operation
- Select the channel you want to store by using " or " button.
- Fix the CTCSS Tone On/Off, CTCSS Tone Frequency.
- Press the "FUNC + MR(MW)" button.

6. SC, DW Button

1) SC(SCAN) Button

To Activate : Press the "SC" button not in the TONE Frequency
Setting Mode and Dual Watch Mode, the radio will start the
scanning process and stopping at any channel that is busy with
signals being communicated. It will remain on that channel during
scan delay time and reactivate scanning.
- If you want to stop scanning process, simply press the "PTT" button.
- During the scanning process, the skipped channel will not be
  scanned.
- d1(dot 1) on the LCD will blink per 0.5 second.

- During the Down(Up) scanning process, press the "()"
  button, then scanning direction will be changed to Down(Up)
  scanning process.
- If a signal is receiving at a certain channel in the CTCSS option
  mode, the scanning process will not stop if the TONE does not
  match with the receiving signal.
- If you press the "FUNC" button at stopping channel during the
  scanning process, this channel will be deleted in the next
  scanning process.

Display of Delete message

NOTE : The deleted channel will be recovered when the radio will
       be On/Off.

If only one channel will remain because of the deletion of channel
in the scanning process, the scanning process will stop and
"EMPTY" will appear on the LCD.

Display of EMPTY message

NOTE : Other buttons located on the front of the radio will not
        operate. If you press these buttons, error beep tone will
        sound.

2) Dual Watch Operation
 To operate Dual Watch :
  (1) Not in the Tone Frequency Setting Mode or Scan Mode,
      select the channel in which you want to monitor, which we
      will refer to as your "A Channel".
  (2) Press the "FUNC + SC/DW" button, then "DW" will appear
      on the LCD.
  (3) Select the "B channel" in which you want to monitor. Once
      "B channel" has been selected, the radio will begin its dual
      watch monitoring.

Display of Dual Watch Feature.

To turn off the "Dual Watch" Channel, simply press the 'FUNC + SC/DW" button or press the "PTT" button. Note that the radio will return to the "A" channel for normal operation.

If you press the "FUNC + SC/DW" button or press the "PTT" button when a signal is receiving on the channel "A" or "B", the Dual Watch feature will be turn off on the "A" or "B".

In the CTCSS Option mode, even though a signal is receiving at A(B) channel, the A(B) channel will move to B(A) channel if the TONE does not match with the receiving signal.

If a signal is receiving at A channel, which will be kept until the signal is disappear. But, if a signal is receiving at B channel, which will be changed to A channel to check the signal of A channel per 3 seconds.

Even though a signal is disappear at A(B) channel, which will be remaining there to check another receiving signal during scan delay time. After that A(B) channel will be changed to other channel.

If you press the " or " button when a signal is receiving at A channel in Dual Watch feature, error tone will sound. But, if you press the " or " button when there is no receiving signal or there is a receiving signal at B channel, B channel will move to higher(lower) channel than is currently chose the channel. In dual watch feature, power save function does not operate.

7. C, LOCK

1) C (Call) Button

To activate, press the "C" button in the receiving mode including Memory channel mode, Scan Mode and Dual Watch. Call channel No.(Frequency) is fixed as CH 38 (Frequency 434.000MHz), which is not changeable.

Display of Call channel No.(Frequency)

To De-activate, press the "C" button once again.

NOTE : - If you press "C" button in the Setting mode, current data
will be stored and change to Call Mode.
  - If you press "C" button in Scan/Dual Watch mode
Scanning/Dual Watch process will stop and change to Call
mode.

2) LOCK

To Activate : Press the "FUNC + C(LOCK)" button. The "   "
will appear on the LCD to indicate that this feature is currently
activated.

To De-Activate : Repeat process described in "To Activate".
The "   " will disappear from the LCD.

8. Electric Microphone
Front mounted, electrostatic condenser microphone for clear high
quality transmission power. You should hold the radio 2-4 inches
from your mouth and speak in a normal voice.

9. Speaker
High quality, impact resistant output speaker for clear output
reception.

10. Battery Case
See "Batteries" for installation instruction.(Page 18)

Display Panel Features

1. TX

Indicates that radio is in the "transmit" mode.

2. Function Mode

Indicates the "FUNC" button has been selected.

3. DW

Indicates that the "Dual Watch" feature has been activated.

4. TSQ

Indicates that Tone Squelch" feature has been activated.

5. PS

Indicates that the radio is in the "Battery Save" mode.

6. Lock

Indicates the "Key Lock" feature has been activated.

7. Beep

Indicates that "Beep" tone confirmation is on.

8. Bell

Indicates that "Bell" feature has been activated.

9. Memory channel Indicator

Display the memorized channel number.

10. d2 (Dot No. 2)

This dot is used to display the "CTCSS" Frequency. (Unit : Hz)

11. d1 (Dot No. 1)

This dot is used to display the RX or TX Frequency. (Unit : MHz)

12. Channel(Frequency) Indicator

Display the channel No. or Frequency No.

13. Signal strength indicator

The radio incorporates a tenth segment incoming signal and power
output meter in the LCD. When receiving a signal, the meter will
indicate how strong the signal is. A week signal will be indicated by
one or two segments, while a very strong signal will have 8 to 10
segments. When transmitting, the letter "TX" will appear on the LCD
and 10 segments will appear on the LCD.

14. Battery remainder level meter

If you want see the battery level when you press the "PTT" button,
press the monitor button with PTT button.

15. Battery

Indicates batteries are getting low. If the battery level is lower than
the standard point, Battery Level Indicator will twinkle.

16. CALL

Indicates the CTCSS correct call.

17. BUSY

Indicates that RF signal received.

BATTERY PACK INSTRUCTION

1. Press down the battery lock button on the bottom side of the radio.( )

2. Open the battery cover on the back side of the radio.( )

3. Install the battery as like .

4. Put on the battery cover.( )

5. Press the battery lock button upward to lock the battery case.

To supply the power, use the D.C charge adapter or desk top charger.

TO RECEIVE

If you have just transmitted, then release the "PTT" button. If you have
not transmitted, just leave the radio on an you receive in your selected
channel. If the Squelch will be received over than 20m second in the
receiving mode, BUSY will appear on the LCD and audible tone will
sound. In the CTCSS option, CALL will appear on the LCD and
audible tone will sound after checking the TONE(Correct Call).

TO TRANSMIT

Press and Hold the "PTT" button to transmit the signal.

A. If Busy Channel Lock Out Option is on in the receiving mode,
   Busy Lock Error Message will appear on the LCD and the radio
   will stay in receiving mode even though you try to transmit the
   signal.

B. If Time-Out-Time option is on, the continuous transmitting time will
   be limited by this option.

SPECIFICATION

1. GENERAL

   CHANNEL ------------------------- 69CHs

   FREQUENCY----------------------- 433.075MHz TO

                   434.775MHz

   FREQUENCY GENERATION----------- PLL SYNTHESIZER

   FREQUENCY STABILITY-------------- +/- 5ppm

   OPERATING TEMPERATURE---------- -10 TO +55

   POWER SOURCE-------------------- D.C 2.0V TO 4.5V

   MODULATION---------------------- F3E

   IMPEDANCE------------------------ 50 ohm

   DIMENSIONS----------------------- 58(W) x 85(H)

                   x 26.5(D)mm

   WEIGHT--------------------------- 160g WITH BATTERY

2. RECEIVER SECTION

   CIRCUIT TYPE---------------------- DUAL CONVERSION

                   SUPERHETERODYNE

   IF FREQUENCY--------------------- 1'st IF : 21.4MHz

                   2'nd IF : 455KHz

   SENSITIVITY------------------------ 0.22uV FOR 12dB SND

   SELECTIVITY----------------------- 50dB Min

   SPURIOUS & IMAGE REJECTION------ 50dB Min

   INTER MODULATION DISTORTION----- 50dB Min

   S/N RATIO-------------------------- 40dB Min

   AUDIO OUTPUT @10%THD------------ 300mW 16 , BTL

(at 4.5V)

3. TRANSMITTER SECTION

POWER OUTPUT -------------------- 10mW OR

200mW

DISTORTION------------------------ 5%

DEVIATION-------------------------- +/- 5KHz

S/N RATIO-------------------------- 40dB

CURRENT DRAIN-------------------- 300mA

19

CTCSS TONE TABLE

20

maycom Co., Ltd

Suite 463, APT Factory 201, Haan-dong, Kwangmyong-City,
Kyong Ki-Do, Korea Kwangmyong P.O Box 77
OFFICE   TEL : (02) 895-8091/3   FAX : (02) 895-8094
FACTORY TEL : (02) 891-8352/3   FAX : (02) 891-8354

Printed in Korea